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NEW DRUGS

IN CHARGE OF

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HEROIN

HEROIN and one of its salts, heroin hydrochloride, has been introduced as a remedy in the treatment of cough. It is a derivative of morphine (di-acetyl morphine), and shares some of the physical, chemical, and therapeutic properties of this drug. Heroin itself is a white, crystalline, odorless powder, slightly bitter in taste and almost insoluble in water, but soluble on the addition of a few drops of an acid. The dose of heroin is one-twenty-fourth to one-twelfth of a grain.

Heroin hydrochloride is also a white, crystalline, odorless powder, but differs from heroin itself in being very soluble in water, so that it can be given as readily hypodermically as by mouth. On account of this solubility the hydrochloride is preferred to heroin. The dose of the hydrochloride of heroin is from one-twenty-fourth to one-sixth of a grain. As the drug resembles morphine in many of its actions, the dose to children is disproportionately small, and must be used with the same degree of caution as morphine itself. Accordingly, heroin or its hydrochloride may be given in the form of powders, pills, tablet triturates, or in solution; speaking generally, it can be administered in combination with other drugs much like morphine.

The most important indication for the use of heroin (or heroin hydrochloride) is found in cough, whether this be due to consumption, acute bronchitis, chronic bronchitis, pneumonia, or asthma, though it seems least efficacious in asthmatic coughs, and most so in those due to irritation. In the large majority of cases no unpleasant effects follow its use. In a small percentage of cases some of the after-effects of morphine appear, though in lesser degree, such as constipation, nausea, drowsiness, itching, and occasionally habituation is observed. This habituation seems to be easily overcome. Stupor, giddiness, and severe headache have also been noted. Heroin has been additionally employed with considerable success as a substitute for morphine in alleviating pain and in producing sleep; it has been used successfully in curing morphine habitués. Heroin does not seem to affect the circulation unfavorably and stimulates respiration, and in general is the

most powerful (excepting morphine) and most reliable drug at our command to-day to subdue cough.

SULFONAL

THIS drug occurs in the form of a fine, white, odorless, and tasteless powder, very slowly soluble in cold and soluble in about twenty parts of hot water. It is used to produce sleep in doses of from five to twenty grains, and should always be given *dissolved* in hot water or hot milk at least two hours before the desired effect is to be obtained. On account of this insolubility the drug is always slow in action.

In medicinal doses sulfonal causes a condition resembling natural sleep, which may be protracted and is often followed by drowsiness and mental confusion. In large doses it produces deep sleep lasting for many hours, which is followed by mental depression, tremors, staggering of gait, or weakness, after which complete recovery occurs. It is therefore a perfectly safe hypnotic in single doses.

The habitual administration of sulfonal in ordinary medicinal dose over protracted periods of time is accompanied by considerable danger. The first symptom to warn the patient or the nurse usually is a *pink* coloration of the urine, due to the presence of altered blood-pigment, and accompanied or followed very soon by albumin, blood, and tube-casts. These symptoms, indicating serious kidney disease, are often succeeded by evidences of digestive or nervous disturbance, such as loss of appetite, colic, obstinate constipation, local or general paralysis, mental depression, and failure of memory. Many cases of advanced poisoning terminate fatally. For this reason it is exceedingly important to watch for the first symptoms of chronic poisoning and to discontinue the drug at once; even then it may be too late to save the patient. The treatment consists in flushing out the system with large draughts of water.

TRIONAL

THIS drug is closely related to sulfonal in its composition, physical properties, and general effects on the system, but is more rapid in action, producing sleep in doses of from five to twenty grains. A number of cases of poisoning have been reported from the administration of large doses for protracted periods of time, but all reports show that trional is much safer than sulfonal, probably because of its greater solubility. The symptoms of poisoning resemble those of sulfonal. Trional has been found especially useful in the insomnia attending great mental excitement.